Evaluator:	Team Leader:	Date:
Site:	Assignment:	Previous ARCA?

Sub-element 2.a — Emergency Worker Exposure Control

Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers, including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, K.4, J.10. e, f)

Was this criterion adequately demonstrated?		
	Yes No N/A	
	If No, identify all exercise issues by addressing the elements listed on the attached ISSUES FOR CRITERION form. Remember, if there is no effect or potential effect	
	there is no exercise issue.	

• **Reminder:** Provide a complete evaluator packet to the Team Leader with a written narrative summary, timeline of observations, and all forms and information used during the exercise. Cite outstanding performance where observed.

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Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place, as specified in the ORO's plans and procedures, to authorize emergency worker exposure limits to be exceeded for specific missions.

Radiation exposure limits for emergency workers are the recommended accumulated dose limits or exposure rates that emergency workers may be permitted to incur during an emergency. These limits include any pre-established administrative reporting limits (that take into consideration Total Effective Dose Equivalent or organ-specific limits) identified in the ORO's plans and procedures.

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OROs authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans and procedures.

Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of preauthorized levels and to the number of emergency workers receiving radiation dose above pre-authorized levels.

As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established Protective Action Guides (PAGs) for KI administration.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

NARRATIVE SUMMARY FOR CRITERION:

(EVALUATOR MUST WRITE A NARRATIVE AND INSERT IT HERE.)

ISSUES FOR CRITERION:

(Address the following elements:)

Condition (describe the inadequacy):

Evaluator:Site:			•
Possible Cause (what is responsible):			
Reference (cite the specific NUREG-0654 element, regulation, etc.):			
Effect (what resulted, or could have resulted, from this issue):			
Recommendation (how to c	orrect it):		

Evaluator:	Team Leader:	Date:
Site:	Assignment:	Previous ARCA?

Sub-element 2.b. — Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and Licensee and ORO dose projections, as well as knowledge of onsite and offsite environmental conditions. (NUREG-0654, I.8, 10 and Supplement 3)

• Was this criterion adequately demonstrated?		
	Yes No N/A	
	If No, identify all exercise issues by addressing the elements listed on the attached ISSUES FOR CRITERION form. Remember, if there is no effect or potential effect,	
	there is no exercise issue.	

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Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to use all available data to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the ORO's plans and procedures or EPA 400–R–92–001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher than normal risk from evacuation.

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During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (PAR) for decision-makers based on available information and recommendations from the licensee and field monitoring data, if available.

When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAG to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

NARRATIVE SUMMARY FOR CRITERION:

(EVALUATOR MUST WRITE A NARRATIVE AND INSERT IT HERE.)

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(Address the following	elements:)	
Condition (describe the in	adequacy):	
Possible Cause (what is re	esponsible):	
Reference (cite the specifi	c NUREG-0654 element, reg	gulation, etc.):
Effect (what resulted, or co	ould have resulted, from this	issue):
Recommendation (how to	correct it):	

Evaluator:	Team Leader:	Date:
Site:	Assignment:	Previous ARCA?

Sub-element 2.b. — Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PAD) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9, 10.m, f)

•	Was this criterion adequately demonstrated?		
	Yes No N/A		
	If No, identify all exercise issues by addressing the elements listed on the attached ISSUES FOR CRITERION form. Remember, if there is no effect or potential effect		
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• **Reminder:** Provide a complete evaluator packet to the Team Leader with a written narrative summary, timeline of observations, and all forms and information used during the exercise. Cite outstanding performance where observed.

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Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to use all available data to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the OROs' plans and procedures or EPA 400–R–92–001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher than normal risk from evacuation.

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Offsite Response Organizations (OROs) should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.

The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. The decision-makers should demonstrate the capability to change protective actions as appropriate based on these projections.

If the ORO has determined that KI will be used as a protective measure for the general public under offsite plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement sheltering and evacuation. This decision should be based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process should involve close coordination with appropriate assessment and decision-making staff.

If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions.

All decision-making activities by ORO personnel must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

NARRATIVE SUMMARY FOR CRITERION:

(EVALUATOR MUST WRITE A NARRATIVE AND INSERT IT HERE.)

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Condition (describe the inac	dequacy):		
Possible Cause (what is responsible):			
Reference (cite the specific	NUREG-0654 element, re	gulation, etc.):	
Effect (what resulted, or could have resulted, from this issue):			
Recommendation (how to c	correct it):		

Evaluator:	Team Leader:	Date:
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• Was this criterion adequately demonstrated?

Sub-element 2.c — Protective Action Decisions Consideration for the Protection of Special Populations

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9, J.10.d, e)

Yes	No	N/A					
If No.	idantify all	avamaisa issues	hrv addmaaa	ina tha ala	manta liata	d on the	attaa h ad

If **No**, identify all exercise issues by addressing the elements listed on the attached **ISSUES FOR CRITERION** form. **Remember**, if there is no effect or potential effect, there is no exercise issue.

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Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) should have the capability to determine protective action recommendations, including evacuation, sheltering and use of potassium iodide (KI), if applicable, for special population groups (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, and transportation dependent individuals). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

Extent-of-play

Usually, it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, examples of factors that should be considered are: weather conditions, shelter availability, availability of transportation assets, risk of evacuation vs. risk from the avoided

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dose, and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

Applicable OROs should demonstrate the capability to alert and notify all public school systems/districts of emergency conditions that are expected to or may necessitate protective actions for students. Contacts with public school systems/districts must be actual.

In accordance with plans and/or procedures, OROs and/or officials of public school systems/districts should demonstrate the capability to make prompt decisions on protective actions for students. Officials should demonstrate that the decision making process for protective actions considers (that is, either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (for example, whether the students are still at home, en route to the school, or at the school).

All decision-making activities associated with protective actions, including consideration of available resources, for special population groups must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

NARRATIVE SUMMARY FOR CRITERION:

(EVALUATOR MUST WRITE A NARRATIVE AND INSERT IT HERE.)

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Effect (what resulted, or cou	ald have resulted, from th	is issue):
Recommendation (how to c	correct it):	

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Sub-element 2.d. — Radiological Assessment and Decision Making for the Ingestion Exposure Pathway

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO's planning criteria. (NUREG-0654, J. 9,11)

•	Was this criterion adequately demonstrated?		
	Yes No N/A		
	If No, identify all exercise issues by addressing the elements listed on the attached ISSUES FOR CRITERION form. Remember, if there is no effect or potential effe	ect,	

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Intent

there is no exercise issue.

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the means to assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate PAGs, and make timely, appropriate protective action decisions to mitigate exposure from the ingestion pathway.

During an accident at a nuclear power plant, a release of radioactive material may contaminate water supplies and agricultural products in the surrounding areas. Any such contamination would likely occur during the plume phase of the accident and, depending on the nature of the release, could impact the ingestion pathway for weeks or years.

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It is expected that the Offsite Response Organizations (OROs) will take precautionary actions to protect food and water supplies, or to minimize exposure to potentially contaminated water and food, in accordance with their respective plans and procedures. Often such precautionary actions are initiated by the OROs based on criteria related to the facility's Emergency Classification Levels (ECL). Such actions may include recommendations to place milk animals on stored feed and to use protected water supplies.

The ORO should use its procedures (for example, development of a sampling plan) to assess the radiological consequences of a release on the food and water supplies. The ORO's assessment should include the evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas, the characterization of the releases from the facility, and the extent of areas potentially impacted by the release. During this assessment, OROs should consider the use of agricultural and watershed data within the 50-mile EPZ. The radiological impacts on the food and water should then be compared to the appropriate ingestion PAGs contained in the ORO's plan and/or procedures. (The plan and/or procedures may contain PAGs based on specific dose commitment criteria or based on criteria as recommended by current Food and Drug Administration guidance.) Timely and appropriate recommendations should be provided to the ORO decision-makers group for implementation decisions. As time permits, the ORO may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.

The ORO should demonstrate timely decisions to minimize radiological impacts from the ingestion pathway, based on the given assessments and other information available. Any such decisions should be communicated and, to the extent practical, coordinated with neighboring and local OROs.

OROs should use Federal resources, as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

Evaluator:	Team Leader:	Date:	
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Kecommendation	(how to correct it):		

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Site:	Assignment:	Previous ARCA?

Was this criterion adequately demonstrated?

there is no exercise issue.

Sub-element 2.e. — Radiological Assessment and Decision Making Concerning Relocation, Reentry, and Return

Criterion 2.e.1: Timely relocation, reentry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG-0654, I.10; J.9; M.1)

was this efficient adoquatory demonstrated.		
Yes No N/A		
If No, identify all exercise issues by addressing the elements listed on the attached ISSUES FOR CRITERION form. Remember, if there is no effect or potential effect		

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Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to make decisions on relocation, Reentry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a nuclear power plant.

Extent-of-play

Relocation: OROs should demonstrate the capability to estimate integrated dose in contaminated areas and to compare these estimates with PAGs, apply decision criteria for relocation of those individuals in the general public who have not been evacuated but where projected doses are in excess of relocation PAGs, and control access to evacuated and restricted areas. Decisions are made for relocating members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs. Determination of areas to be restricted should be based on factors such as the mix of radionuclides in deposited

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materials, calculated exposure rates vs. the PAGs, and field samples of vegetation and soil analyses.

Reentry: Decisions should be made regarding the location of control points and policies regarding access and exposure control for emergency workers and members of the general public who need to temporarily enter the evacuated area to perform specific tasks or missions.

Examples of control procedures are: the assignment of, or checking for, direct-reading and non-direct-reading dosimetry for emergency workers; questions regarding the individual's objectives and locations expected to be visited and associated time frames; availability of maps and plots of radiation exposure rates; advice on areas to avoid; and procedures for exit including: monitoring of individuals, vehicles, and equipment; decision criteria regarding decontamination; and proper disposition of emergency worker dosimetry and maintenance of emergency worker radiation exposure records.

Responsible OROs should demonstrate the capability to develop a strategy for authorized Reentry of individuals into the restricted zone, based on established decision criteria. OROs should demonstrate the capability to modify those policies for security purposes (e.g., police patrols), for maintenance of essential services (e.g., fire protection and utilities), and for other critical functions. They should demonstrate the capability to use decision making criteria in allowing access to the restricted zone by the public for various reasons, such as to maintain property (e.g., to care for farm animals or secure machinery for storage), or to retrieve important possessions. Coordinated policies for access and exposure control should be developed among all agencies with roles to perform in the restricted zone. OROs should demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that OROs need to develop policies on Reentry will be determined by scenario events.

Return: Decisions are to be based on environmental data and political boundaries or physical/geological features, which allow identification of the boundaries of areas to which members of the general public may return. Return is permitted to the boundary of the restricted area that is based on the relocation PAG.

Other factors that the ORO should consider are, for example: conditions that permit the cancellation of the Emergency Classification Level and the relaxation of associated restrictive measures; basing return recommendations (i.e., permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis) on measurements of radiation from ground deposition; and the capability to identify services and facilities that require restoration within a few days and to identify the procedures and resources for their restoration. Examples of these services and facilities are: medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

Evaluator:	Team Leader:	Date:
Site:	Assignment:	Previous ARCA?
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ISSUES FOR CRITERION:		
(Address the following e	lements:)	
Condition (describe the ina-	dequacy):	
Possible Cause (what is res	ponsible):	
Reference (cite the specific	NUREG-0654 element, 1	regulation, etc.):
Effect (what resulted, or con	uld have resulted, from th	is issue):
Recommendation (how to	correct it):	